

WHAT IS CLAIMED IS:

1. A method for improving image classification of a digital image comprising the steps of:

- (a) providing an image;
- (b) systematically recomposing the image to generate an expanded set of images; and
- (c) using a classifier and the expanded set of images to determine an image classification for the image, whereby the expanded set of images provides at least one of an improved classifier and an improved classification result.

2. The method as claimed in claim 1 wherein the image provided in step (a) is an exemplar image and in step (b) the exemplar image is systematically recomposed to generate an expanded set of exemplar images.

3. The method as claimed in claim 2 wherein the expanded set of exemplar images are used to train the classifier in step (c), thereby providing an improved classifier.

4. The method as claimed in claim 1 wherein the image provided in step (a) is a test image and in step (b) the test image is systematically recomposed to generate an expanded set of test images.

5. The method as claimed in claim 4 wherein the expanded set of test images are processed by the classifier in step (c), thereby providing an improved image classification result.

6. The method as claimed in claim 2 wherein the image provided in step (a) further includes a test image and in step (b) the test image is systematically recomposed to generate an expanded set of test images.

7. The method as claimed in claim 6 wherein the expanded set of test images are processed with the improved classifier in step (c), thereby providing an improved image classification result from the improved classifier.

8. The method as claimed in claim 1 wherein step (b) comprises spatially recomposing the image to generate an expanded set of spatially recomposed images.

9. The method as claimed in claim 8 wherein spatially recomposing the image in step (b) comprises horizontally mirroring the image, thereby doubling the number of images in the expanded set of images.

10. The method as claimed in claim 8 wherein spatially recomposing the image in step (b) comprises systematically cropping the edges of the image from one or more sides of the image, thereby increasing the number of images in the expanded set of images.

11. The method as claimed in claim 1 wherein step (b) comprises temporally recomposing the image to generate an expanded set of temporally recomposed images, whereby the images in the expanded set simulate the appearance of capturing an image earlier or later in time.

12. The method as claimed in claim 11 wherein temporally recomposing the image in step (b) comprises systematically shifting the color distribution of the image, thereby increasing the number of images in the expanded set of images.

13. The method as claimed in claim 11 wherein temporally recomposing the image in step (b) comprises systematically shifting the illuminant quality of the image, thereby increasing the number of images in the expanded set of images.

14. The method as claimed in claim 8 wherein step (b) further comprises temporally recomposing one or more of the spatially recomposed images to generate an expanded set of images, whereby the images in the expanded set simulate the appearance of capturing an image earlier or later in time.

15. The method as claimed in claim 14 wherein temporally recomposing the images in step (b) comprises systematically shifting the color distribution of the images, thereby increasing the number of images in the expanded set of images.

16. The method as claimed in claim 14 wherein temporally recomposing the images in step (b) comprises systematically shifting the illuminant quality of the images, thereby increasing the number of images in the expanded set of images.

17. The method as claimed in claim 1 wherein the image classification is a scene classification and wherein the classifier and the expanded set of images are used in step (c) to determine a scene classification.

18. The method as claimed in claim 17 wherein either color balance or exposure adjustment is customized for the image based upon the scene classification.

19. The method as claimed in claim 1 wherein the image is a medical image, and wherein the step of systematically recomposing the image in step (b) is a spatial recombination applied to the medical image and the classifier and the expanded set of images are used in step (c) to determine a medical image classification for the medical image.